



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of)
Adam Jude Ahne) Group: 2819
Serial No.: 10/629,008)
Filed: July 29, 2003)
Title: TRI-STATE DETECTION CIRCUIT FOR USE IN)
DEVICES ASSOCIATED WITH AN IMAGING SYSTEM) Examiner: D. LE

LETTER

MS Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Enclosed herewith, is the Appeal Brief Of Appellant in the above-identified patent application. The \$500.00 fee is enclosed by credit card payment form PTO-2038.

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Respectfully submitted,

Paul C. Gosnell
Registration No. 46,735

Attorney for Appellants

RKA14/ts

TAYLOR & AUST, P.C.
12029 E. Washington Street
Indianapolis, IN 46229
Telephone: 317-894-0801
Facsimile: 317-894-0803

Encs.: Return postcard

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Paul C. Gosnell, Reg. No. 46,735

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BRIEF OF APPELLANT

MS APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This appeal is taken from the decision of the Examiner, dated September 5, 2006,
finally rejecting claims 24, 38-30, 34, and 35. Appellant timely filed a Notice of Appeal in
this matter on December 4, 2006.

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II. REAL PARTY IN INTEREST

The real party in interest in this appeal is Lexmark International, Inc., a corporation organized and existing under the laws of the State of Delaware, which owns the entire interest in this patent application as set forth in the underlying claimed invention.

III. RELATED APPEALS AND INTERFERENCES

No related Appeals or Interferences are known to the Appellant.

IV. STATUS OF CLAIMS

Pending: 24-35.

Canceled: 1-23.

Allowed: 25-27 and 31-33.

Objected To: None.

Rejected: 24, 28-30, 34, and 35.

Withdrawn from Consideration: none.

On Appeal: 24, 28-30, 34, and 35.

V. STATUS OF AMENDMENTS

A Reply Under 37 CFR 1.116 requesting reconsideration was submitted in this case on October 26, 2006, in response to the final rejection in the Office Action mailed September 5, 2006. The Reply did not include any claim amendments. The Reply was considered, as indicated in the Advisory Action mailed November 8, 2006.

VI. SUMMARY OF CLAIMED SUBJECT MATTER

The present Summary of Claimed Subject Matter includes background information in support of the claims, which is set forth immediately below, followed by a summary of each independent claim, including reference to Appellant's specification by page and line number, and reference to Appellant's drawings, which begins on page 10 of the present Brief.

A. Background Information

In the following background information, reference is made to the specification at the end of each paragraph.

The present invention generally an imaging system, and, more particularly, to a tri-state detection circuit that may be used, for example, in devices associated with an imaging system. (Spec at page 1, lines 6-8).

Referring to Fig. 1, there is shown a diagrammatic depiction of an imaging system 10 embodying the present invention. Imaging system 10 includes a host 12 and an imaging apparatus 14. Host 12 communicates with imaging apparatus 14 via a communications link 16. Communications link 16 may be established by a direct cable connection, wireless connection or by a network connection such as for example an Ethernet local area network (LAN). (Spec at page 3, lines 24-30).

Imaging apparatus 14 can be, for example, an ink jet printer and/or copier, or an electrophotographic printer and/or copier. Imaging apparatus 14 includes a controller 22, a print engine 24 and a user interface 26. (Spec at page 4, lines 7-9).

Associated with imaging apparatus 14 is a supply item 34, such as for example an ink jet printhead cartridge or an EP cartridge. Supply item 34 is received into print engine 24.

Supply item 34 includes an electronic circuit 36, including interface circuitry for facilitating communications with controller 22. As shown in Fig. 2, in an embodiment wherein supply item 34 is an ink jet printhead cartridge, electronic circuit 36 may be formed as a part of the silicon on which a printhead 38 is formed. (Spec at page 4, lines 24-29).

Fig. 3 shows a tri-state detection circuit 40 that may be incorporated into host 12, imaging apparatus 14 or supply item 34. Tri-state detection circuit 40 can be used to facilitate communications between electronic apparatus. For example, tri-state detection circuit 40 may form a portion of a proprietary interface in or associated with electronic circuit 36 of supply item, or may be formed as a portion of a proprietary interface in or associated with controller 22. Other uses of tri-state detection circuit 40 may be as a portion of a peripheral interface for a peripheral device, such as a scanner, to be attached to host 12 or imaging apparatus 14. Further, it is contemplated that tri-state detection circuit 40 may serve as a mode selection circuit for printhead 38. (Spec from page 4, line 30 to page 5, line 6).

Tri-state detection circuit 40 includes two input ports, identified herein as input port PIN and a clock input port CLOCK, and two output ports, output port OUT1 and output port OUT2. Tri-state detection circuit 40 is used to detect each of three input states available from a tri-state input device 42 coupled to input port PIN. The three states are: logic high (1); logic low (0); and, floating, or sometimes also referred to as high impedance. (Spec at page 5, lines 7-12).

By using a tri-state input, three possible modes of operation may be readily and selectably accommodated. (Spec at page 8, lines 11-12).

As set forth in the following three (3) paragraphs, three possible modes of operation in the present embodiment pertain to the use of a memory 84, a 300 dpi print mode circuitry 86 or a 600 dpi print mode circuitry 88.

As shown in Fig. 6, printhead 38 includes tri-state detection circuit 40 (see Fig. 3), decoding circuit 54 (see Fig. 5), a memory 84, 300 dpi print mode circuitry 86 and 600 dpi print mode circuitry 88. Memory 84 includes a select port 90. 300 dpi print mode circuitry 86 includes a select port 92. 600 dpi print mode circuitry 88 includes a select port 94. Output ports 78, 80 and 82 of decoding circuit 54 are respectively coupled to the select ports 90, 92, 94 of memory 84, 300 dpi print mode circuitry 86 and 600 dpi print mode circuitry 88. Thus, signals PIN FLOATING, PIN HIGH and PIN LOW may be used to select one of the devices memory 84, 300 dpi print mode circuitry 86 and 600 dpi print mode circuitry 88 based on the state, i.e., signal level, of the tri-state input signal presented at input port PIN. (Spec at page 8, lines 13-22).

Controller 22 of imaging apparatus 14 supplies a tri-state input signal to input port PIN via a communication link 96, supplies a clocking signal to input port CLOCK via a communication link 98, and supplies data to one of memory 84, 300 dpi print mode circuitry 86 and 600 dpi print mode circuitry 88 via communications link 100, which is shown as a common data bus. Each or communications links 96, 98, 100 may be wired, or wireless. (Spec at page 8, lines 23-28).

If controller 22 supplies a floating input signal to input port PIN, then output signal PIN FLOATING at output port 78 will be set at a logic high level, thereby selecting communication with memory 84 over communications link 100. If controller 22 supplies a high input signal to input port PIN, then output signal PIN HIGH at output port 80 will be set

at a logic high level, thereby selecting communication with 300 dpi print mode circuitry 86 over communications link 100. If controller 22 supplies a low input signal to input port PIN, then output signal PIN LOW at output port 82 will be set at a logic high level, thereby selecting communication with 600 dpi print mode circuitry 88 over communications link 100. (Spec from page 8, line 29 to page 9, line 5).

B. Claims

Claim 24. Referring to Figs. 1-3, and 6, a supply item 34 (Spec at page 4, lines 24-29, Fig. 2) comprises a circuit 40 including a tri-state input port PIN (Spec at page 4, lines 30-31; page 5, lines 7-8; and Figs. 3 and 6), the supply item 34 associated with an imaging apparatus 14 (Spec at page 4, line 24, Fig. 1), and the supply item 34 having at least three modes of operation, wherein a particular mode of operation of the at least three modes of operation is selected based on a signal level of a tri-state input signal supplied to the tri-state input port PIN (Spec from page 8, line 8 to page 9, line 5) (As summarized in the last four (4) paragraphs of the above Background Information section, beginning on page 9 of the present Brief, three possible modes of operation in a disclosed embodiment of the present invention pertain to the use of memory 84, 300 dpi print mode circuitry 86 or 600 dpi print mode circuitry 88).

Claim 30. Referring to Figs. 1-3, and 6, an imaging apparatus 14 comprises a controller 22 (Spec at page 4, lines 9-10, Fig. 1); and a supply item 34 for use in the imaging apparatus 14 (Spec at page 4, lines 24-29, Fig. 2) including a circuit 40 having a tri-state input port PIN coupled to the controller 22 (Spec at page 4, lines 30-31; page 5, lines 7-8; and Figs. 3 and 6), the supply item 34 having at least three modes of operation, wherein a particular mode of operation of the at least three modes of operation is selected based on a signal level of a tri-state input signal supplied to the tri-state input port PIN by the controller 22 (Spec from page 8, line 8 to page 9, line 5) (As summarized in the last four (4) paragraphs of the above Background Information section, beginning on page 9 of the present Brief, three possible modes of operation in a disclosed embodiment of the present invention pertain to the use of memory 84, 300 dpi print mode circuitry 86 or 600 dpi print mode circuitry 88).

VII. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 24, 28-30, 34, and 35 were rejected under 35 U.S.C. 102(b) as being anticipated by Potucek, et al., U.S. Patent No. 5,253,934.

VIII. ARGUMENT

A. CLAIMS 24, 28-30, 34, AND 35 ARE PATENTABLE UNDER 35 U.S.C. 102(b)

In the Final Office Action mailed September 5, 2006, claims 24, 28-30, 34, and 35 were rejected under 35 U.S.C. §102(b) as being anticipated by Potucek, et al., U.S. Patent No. 5,253,934 (hereinafter, Potucek).

However, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (MPEP 2131).

As set forth below, Appellant submits that claims 24, 28-30, 34, and 35 are not disclosed, taught, or suggested by Potucek, and are therefore patentable in their present form.

1. POTUCEK

Potucek is directed to circuitry on a printer for controlling signals flowing to a printhead forming part of the printer apparatus to control current uniformity to the recording elements (col. 1, lines 32-35). Potucek discloses a linear array 10 of 3584 triggerable recording elements (LEDs), disposed to expose selectively a photosensitive image-receiver medium 12 that is movable relative to the array (col. 3, lines 20-25). Associated with each LED is a data register means 24 for latching data from a bus during each cycle of operation for printing a single line of dots or pixels (col. 6, lines 13-16). A token bit is used to enable the data register means associated with a particular LED to accept the data while other data register means associated with other LED's await their respective data (col. 6, lines 17-20).

Buffers 31 with enable inputs and direction controls are coupled to a token bit shift register 28 so that programmable control may be made of the direction for shifting the token bit along the token bit shift register 28 (col. 6, lines 45-50). In the example where the token bit is to be shifted from left to right in FIG. 4 for the Data Odd half of the printhead, the signal line TDIR (token direction) is made at an appropriate logic level to allow the token bit on line LTOKEN to pass from left to right (col. 6, lines 50-54).

Thus, in response to clock pulses from the data processor 16 the token bit is passed from stage to stage (left to right in FIG. 4) of the token bit shift register 28 and accordingly outputted sequentially over respective lines 21 through OR gates 11 to lines 27 for enablement of all the master latches 25 of a respective data register 24 (col. 6, lines 54-60).

With movement of the token bit from stage to stage of the shift register 28, the data bits occurring on lines DI0-DI5 are accepted by the data registers 24 in turn from left to right until all the 1792 data registers on this side of the printhead have acquired their respective six bits of data (col. 6, lines 60-65).

2. CLAIM 24 IS NOT ANTICIPATED BY POTUCEK

Appellant's claim 24 is directed to a supply item comprising a circuit including a tri-state input port, said supply item associated with an imaging apparatus, and said supply item having at least three modes of operation, wherein a particular mode of operation of said at least three modes of operation is selected based on a signal level of a tri-state input signal supplied to said tri-state input port.

A tri-state signal is a signal that may be in one of three states: logic high (1); logic low (0); and, floating, sometimes also referred to as high impedance (see Appellant's specification at page 1, lines 10-12, and page 5, lines 11-12).

Appellant respectfully submits that Potucek does not disclose, teach, or suggest a supply item having a circuit including a tri-state input port, as recited in claim 24, much less wherein the supply item has at least three modes of operation, wherein a particular mode of operation of the at least three modes of operation is selected based on a signal level of a tri-state input signal supplied to the tri-state input port, as recited in claim 24.

Rather, Potucek discloses a circuit that controls the direction of a token bit that is used to determine whether a data register accepts data or waits for data, but without employing or otherwise disclosing, teaching, or suggesting a tri-state signal or a tri-state input port.

For example, Potucek discloses triggerable recording elements in the form of LEDs (col. 3, lines 20-25), wherein associated with each LED is a data register means 24 for latching data from the bus during each cycle of operation for printing a single line of dots or pixels (col. 6, lines 13-16).

In order to latch data, a token bit is used to enable the data register means associated with a particular LED to accept the data while other data register means associated with other LED's await their respective data (col. 6, lines 17-20).

Buffers 31 with enable inputs and direction controls are coupled to a token bit shift register 28 so that programmable control may be made of the direction for shifting the token bit along the token bit shift register 28 (col. 6, lines 45-50).

However, the buffers 31 do not employ tri-state input ports. Potucek does not disclose, teach, or suggest otherwise. In addition, Potucek does not disclose, teach, or suggest wherein a particular mode of operation of at least three modes of operation is selected based on a signal level of a tri-state input signal supplied to a tri-state input port.

Rather, Potucek simply discloses that where the token bit is to be shifted from left to right in FIG. 4 for the Data Odd half of the printhead, the signal line TDIR (token direction) is made at an appropriate logic level to allow the token bit on line LTOKEN to pass from left to right (col. 6, lines 50-54). In response to clock pulses from the data processor 16, the token bit is passed from stage to stage (left to right in FIG. 4) of the token bit shift register 28 and accordingly outputted sequentially over respective lines 21 through OR gates 11 to lines 27 for enablement of all the master latches 25 of a respective data register 24 (col. 6, lines 54-60).

Thus, Potucek discloses that that the logic value in signal line TDIR governs the direction that the token bit from the LTOKEN line is passed (left to right or right to left), but does not disclose, teach, or suggest that the token bit or the logic level of the TDIR signal line have three different values such as might otherwise represent a tri-state signal, much less that the electronic components that receive such a signal have tri-state input ports.

The Examiner asserts that the Potucek TDIR (Fig. 4A) is a tri-state input port of the Potuck buffer 31.

However, Potucek does not in any manner disclose, teach, or suggest that the TDIR signal line transmits a tri-state signal, or that the buffer 31 is capable of receiving and operating upon a tri-state signal. Rather, the TDIR signal line is for determining whether the

token bit will be passed from left to right or right to left, which pertains to two possible states, not three, such as might otherwise disclose, teach, or suggest a tri-state signal.

In addition, Potucek Fig. 9 explicitly discloses that there are two TDIR bit values, not three: TDIR = 0, which directs the token bit to “GO TOWARD LEFT,” and TDIR = 1, which directs the token bit to “GO TOWARD RIGHT.”

Thus, Potucek clearly discloses that the TDIR signal line transmits a two-state signal to buffer 31, not a tri-state signal.

In contrast to Potucek, Appellant’s tri-state input port PIN receives a tri-state signal, as is illustrated in the truth table of Appellant’s Fig. 4, wherein the three states provided at input port PIN may be either FLOATING, 1, or 0.

Under MPEP 2131, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Since Potucek does not disclose, teach, or suggest a tri-state input port or a tri-state input signal applied to a tri-state input port, much less wherein a particular mode of operation of the at least three modes of operation is selected based on a signal level of a tri-state input signal supplied to the tri-state input port, as recited in claim 24, each and every element as set forth in the claim is not found, either expressly or inherently described, in a single prior art reference.

Accordingly, Potucek does not anticipate claim 24.

Thus, for at least the reasons set forth above, Appellant submits that claim 24 is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 24 under 35 U.S.C. 102(b).

3. CLAIM 28 IS NOT ANTICIPATED BY POTUCEK

Appellant's claim 28 is directed to the supply item of claim 24, wherein said supply item is a printhead cartridge.

In contrast to a printhead cartridge, Potucek discloses an electrophotographic printer, i.e., an LED array printer (Potucek title). For example, Potucek discloses a linear array 10 of 3584 triggerable recording elements (LEDs), disposed to expose selectively a photosensitive image-receiver medium 12 that is movable relative to the array (col. 3, lines 20-25).

Although Potucek refers to LED printheads (col. 3, line 27), the Potucek LED printhead is not a printhead within the context of Appellant's specification and claims.

Appellant's specification clearly differentiates between an ink jet printhead cartridge and an EP cartridge (EP = electrophotographic – see Appellant's specification at page 4, line 17).

For example, see Appellant's specification at page 4, lines 24-25, which sets forth that supply item 34 may be an ink jet “printhead cartridge” or an EP cartridge. The term, “printhead cartridge” is thus contrasted with an EP cartridge in Appellant's specification.

Appellant respectfully submits that the Patent and Trademark Office (“PTO”) determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction ‘in light of the

specification as it would be interpreted by one of ordinary skill in the art.” *Phillips v. AWH Corp.*, 75 USPQ2d 1321, 1329 (Fed. Cir. 2005), quoting *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364, 70 USPQ2d 1827 (Fed. Cir. 2004) (MPEP 2111) (Emphasis added).

Moreover, the specification may reveal a special definition given to a claim term, in which case the inventor’s lexicography governs. *Phillips v. AWH Corp.*, 415, F.3d, 1303, 1316 (Fed. Cir. 2005). (Emphasis added).

Appellant respectfully submits that Appellant’s specification provides, as set forth above, a special definition of “printhead cartridge” that distinguishes a printhead cartridge from an EP cartridge.

The Potucek apparatus is akin to an EP cartridge, and not a printhead cartridge as that term is used within the context of Appellant’s specification and claims.

Since Potucek does not disclose, teach, or suggest wherein the supply item is a printhead cartridge, as recited in claim 28 and as that term is used within the context of Appellant’s specification and claims, each and every element as set forth in the claim is not found, either expressly or inherently described, in a single prior art reference.

Accordingly, Potucek does not anticipate claim 28.

Thus, for at least the reasons set forth above, Appellant submits that claim 28 is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 28 under 35 U.S.C. 102(b).

4. CLAIM 29 IS NOT ANTICIPATED BY POTUCEK

Appellant's claim 29 is directed to the supply item of claim 24, wherein said circuit is formed on a printhead attached to said supply item.

In contrast to a printhead cartridge, Potucek discloses an electrophotographic printer, i.e., an LED array printer (Potucek title). For example, Potucek discloses a linear array 10 of 3584 triggerable recording elements (LEDs), disposed to expose selectively a photosensitive image-receiver medium 12 that is movable relative to the array (col. 3, lines 20-25).

Although Potucek refers to LED printheads (col. 3, line 27), the Potucek LED printhead is not a printhead within the context of Appellant's specification and claims.

Appellant's specification clearly differentiates between an ink jet printhead cartridge and an EP cartridge (EP = electrophotographic – see Appellant's specification at page 4, line 17).

For example, see Appellant's specification at page 4, lines 24-25, which sets forth that supply item 34 may be an ink jet “printhead cartridge” or an EP cartridge. The term, “printhead cartridge” is thus contrasted with an EP cartridge in Appellant's specification.

Appellant respectfully submits that the Patent and Trademark Office (“PTO”) determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction ‘in light of the specification as it would be interpreted by one of ordinary skill in the art.’” *Phillips v. AWH Corp.*, 75 USPQ2d 1321, 1329 (Fed. Cir. 2005), quoting *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364, 70 USPQ2d 1827 (Fed. Cir. 2004) (MPEP 2111) (Emphasis added).

Moreover, the specification may reveal a special definition given to a claim term, in which case the inventor's lexicography governs. *Phillips v. AWH Corp.*, 415, F.3d, 1303, 1316 (Fed. Cir. 2005). (Emphasis added).

Appellant respectfully submits that Appellant's specification provides, as set forth above, a special definition of "printhead cartridge" that distinguishes a printhead cartridge from an EP cartridge.

The Potucek apparatus is akin to an EP cartridge, and not a printhead cartridge as that term is used within the context of Appellant's specification and claims.

Since Potucek does not disclose, teach, or suggest wherein the circuit is formed on a printhead attached to the supply item, as recited in claim 29 and as that term is used within the context of Appellant's specification and claims, each and every element as set forth in the claim is not found, either expressly or inherently described, in a single prior art reference.

Accordingly, Potucek does not anticipate claim 29.

Thus, for at least the reasons set forth above, Appellant submits that claim 29 is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 29 under 35 U.S.C. 102(b).

5. CLAIM 30 IS NOT ANTICIPATED BY POTUCEK

Appellant's claim 30 is directed to an imaging apparatus.

Claim 30 recites, in part, a supply item for use in said imaging apparatus including a circuit having a tri-state input port coupled to said controller, said supply item having at least three modes of operation, wherein a particular mode of operation of said at least three modes

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of operation is selected based on a signal level of a tri-state input signal supplied to said tri-state input port by said controller.

A tri-state signal is a signal that may be in one of three states: logic high (1); logic low (0); and, floating, sometimes also referred to as high impedance (see Appellant's specification at page 1, lines 10-12, and page 5, lines 11-12).

Appellant respectfully submits that Potucek does not disclose, teach, or suggest a supply item having a circuit including a tri-state input port, as recited in claim 30, much less the supply item having at least three modes of operation, wherein a particular mode of operation of the at least three modes of operation is selected based on a signal level of a tri-state input signal supplied to the tri-state input port by the controller, as recited in claim 30.

Rather, Potucek discloses a circuit that controls the direction of a token bit that is used to determine whether a data register accepts data or waits for data, but without employing or otherwise disclosing, teaching, or suggesting a tri-state signal or a tri-state input port.

For example, Potucek discloses triggerable recording elements in the form of LEDs (col. 3, lines 20-25), wherein associated with each LED is a data register means 24 for latching data from the bus during each cycle of operation for printing a single line of dots or pixels (col. 6, lines 13-16).

In order to latch data, a token bit is used to enable the data register means associated with a particular LED to accept the data while other data register means associated with other LED's await their respective data (col. 6, lines 17-20).

Buffers 31 with enable inputs and direction controls are coupled to a token bit shift register 28 so that programmable control may be made of the direction for shifting the token bit along the token bit shift register 28 (col. 6, lines 45-50).

However, the buffers 31 do not employ tri-state input ports. Potucek does not disclose, teach, or suggest otherwise. In addition, Potucek does not disclose, teach, or suggest wherein a particular mode of operation of the at least three modes of operation is selected based on a signal level of a tri-state input signal supplied to the tri-state input port by the controller.

Rather, Potucek simply discloses that where the token bit is to be shifted from left to right in FIG. 4 for the Data Odd half of the printhead, the signal line TDIR (token direction) is made at an appropriate logic level to allow the token bit on line LTOKEN to pass from left to right (col. 6, lines 50-54). In response to clock pulses from the data processor 16, the token bit is passed from stage to stage (left to right in FIG. 4) of the token bit shift register 28 and accordingly outputted sequentially over respective lines 21 through OR gates 11 to lines 27 for enablement of all the master latches 25 of a respective data register 24 (col. 6, lines 54-60).

Thus, Potucek discloses that that the logic value in signal line TDIR governs the direction that the token bit from the LTOKEN line is passed (left to right or right to left), but does not disclose, teach, or suggest that the token bit or the logic level of the TDIR signal line have three different values such as might otherwise represent a tri-state signal, much less that the electronic components that receive such a signal have tri-state input ports.

The Examiner asserts that the Potucek TDIR (Fig. 4A) is a tri-state input port of the Potuck buffer 31.

However, Potucek does not in any manner disclose, teach, or suggest that the TDIR signal line transmits a tri-state signal, or that the buffer 31 is capable of receiving and operating upon a tri-state signal. Rather, the TDIR signal line is for determining whether the token bit will be passed from left to right or right to left, which pertains to two possible states, not three, such as might otherwise disclose, teach, or suggest a tri-state signal.

In addition, Potucek Fig. 9 explicitly discloses that there are two TDIR bit values, not three: TDIR = 0, which directs the token bit to “GO TOWARD LEFT,” and TDIR = 1, which directs the token bit to “GO TOWARD RIGHT.”

Thus, Potucek clearly discloses that the TDIR signal line transmits a two-state signal to buffer 31, not a tri-state signal.

In contrast to Potucek, Appellant’s tri-state input port PIN receives a tri-state signal, as is illustrated in the truth table of Appellant’s Fig. 4, wherein the three states provided at input port PIN may be either FLOATING, 1, or 0.

Under MPEP 2131, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Since Potucek does not disclose, teach, or suggest a tri-state input port or a tri-state input signal applied to a tri-state input port, much less wherein a particular mode of operation of the at least three modes of operation is selected based on a signal level of a tri-state input signal supplied to the tri-state input port by the controller, as recited in claim 30, each and

every element as set forth in the claim is not found, either expressly or inherently described, in a single prior art reference.

Accordingly, Potucek does not anticipate claim 30.

Thus, for at least the reasons set forth above, Appellant submits that claim 30 is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 30 under 35 U.S.C. 102(b).

6. CLAIM 34 IS NOT ANTICIPATED BY POTUCEK

Appellant's claim 34 is directed to the imaging apparatus of claim 30, wherein said supply item is a printhead cartridge.

In contrast to a printhead cartridge, Potucek discloses an electrophotographic printer, i.e., and LED array printer (Potucek title). For example, Potucek discloses a linear array 10 of 3584 triggerable recording elements (LEDs), disposed to expose selectively a photosensitive image-receiver medium 12 that is movable relative to the array (col. 3, lines 20-25).

Although Potucek refers to LED printheads (col. 3, line 27), the Potucek LED printhead is not a printhead within the context of Appellant's specification and claims.

Appellant's specification clearly differentiates between an ink jet printhead cartridge and an EP cartridge (EP = electrophotographic – see Appellant's specification at page 4, line 17).

For example, see Appellant's specification at page 4, lines 24-25, which sets forth that supply item 34 may be an ink jet "printhead cartridge" or an EP cartridge. The term, "printhead cartridge" is thus contrasted with an EP cartridge in Appellant's specification.

Appellant respectfully submits that the Patent and Trademark Office ("PTO") determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction 'in light of the specification as it would be interpreted by one of ordinary skill in the art.'" *Phillips v. AWH Corp.*, 75 USPQ2d 1321, 1329 (Fed. Cir. 2005), quoting *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364, 70 USPQ2d 1827 (Fed. Cir. 2004) (MPEP 2111) (Emphasis added).

Moreover, the specification may reveal a special definition given to a claim term, in which case the inventor's lexicography governs. *Phillips v. AWH Corp.*, 415, F.3d, 1303, 1316 (Fed. Cir. 2005). (Emphasis added).

Appellant respectfully submits that Appellant's specification provides, as set forth above, a special definition of "printhead cartridge" that distinguishes a printhead cartridge from an EP cartridge.

The Potucek apparatus is akin to an EP cartridge, and not a printhead cartridge as that term is used within the context of Appellant's specification and claims.

Since Potucek does not disclose, teach, or suggest wherein the supply item is a printhead cartridge, as recited in claim 34 and as that term is used within the context of Appellant's specification and claims, each and every element as set forth in the claim is not found, either expressly or inherently described, in a single prior art reference.

Accordingly, Potucek does not anticipate claim 34.

Thus, for at least the reasons set forth above, Appellant submits that claim 34 is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 34 under 35 U.S.C. 102(b).

7. CLAIM 35 IS NOT ANTICIPATED BY POTUCEK

Appellant's claim 35 is directed to the imaging apparatus of claim 30, wherein said circuit is formed on a printhead attached to said supply item.

In contrast to a printhead cartridge, Potucek discloses an electrophotographic printer, i.e., and LED array printer (Potucek title). For example, Potucek discloses a linear array 10 of 3584 triggerable recording elements (LEDs), disposed to expose selectively a photosensitive image-receiver medium 12 that is movable relative to the array (col. 3, lines 20-25).

Although Potucek refers to LED printheads (col. 3, line 27), the Potucek LED printhead is not a printhead within the context of Appellant's specification and claims.

Appellant's specification clearly differentiates between an ink jet printhead cartridge and an EP cartridge (EP = electrophotographic – see Appellant's specification at page 4, line 17).

For example, see Appellant's specification at page 4, lines 24-25, which sets forth that supply item 34 may be an ink jet “printhead cartridge” or an EP cartridge. The term, “printhead cartridge” is thus contrasted with an EP cartridge in Appellant's specification.

Appellant respectfully submits that the Patent and Trademark Office (“PTO”) determines the scope of claims in patent applications not solely on the basis of the claim

language, but upon giving claims their broadest reasonable construction ‘in light of the specification as it would be interpreted by one of ordinary skill in the art.’” *Phillips v. AWH Corp.*, 75 USPQ2d 1321, 1329 (Fed. Cir. 2005), quoting *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364, 70 USPQ2d 1827 (Fed. Cir. 2004) (MPEP 2111) (Emphasis added).

Moreover, the specification may reveal a special definition given to a claim term, in which case the inventor’s lexicography governs. *Phillips v. AWH Corp.*, 415, F.3d, 1303, 1316 (Fed. Cir. 2005). (Emphasis added).

Appellant respectfully submits that Appellant’s specification provides, as set forth above, a special definition of “printhead cartridge” that distinguishes a printhead cartridge from an EP cartridge.

The Potucek apparatus is akin to an EP cartridge, and not a printhead cartridge as that term is used within the context of Appellant’s specification and claims.

Since Potucek does not disclose, teach, or suggest wherein the circuit is formed on a printhead attached to the supply item, as recited in claim 35 and as that term is used within the context of Appellant’s specification and claims, each and every element as set forth in the claim is not found, either expressly or inherently described, in a single prior art reference.

Accordingly, Potucek does not anticipate claim 35.

Thus, for at least the reasons set forth above, Appellant submits that claim 35 is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 35 under 35 U.S.C. 102(b).

E. CONCLUSION

For the foregoing reasons, Appellant submits that claims 24, 28-30, 34, and 35 are patentable in their present respective forms. Accordingly, Appellant respectfully requests that the Board reverse the final rejections of the appealed claims.

Respectfully submitted,



Paul C. Gosnell
Registration No. 46,735

Attorney for Appellant

RKA14/ts

TAYLOR & AUST, P.C.
12029 E. Washington Street
Indianapolis, IN 46229
Telephone: 317-894-0801
Facsimile: 317-894-0803

Encs.: Return postcard

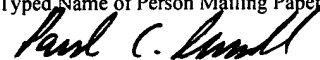
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Paul C. Gosnell, Reg. No. 46,735

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IX. CLAIMS APPENDIX

1. (Canceled)
2. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Canceled)
7. (Canceled)
8. (Canceled)
9. (Canceled)
10. (Canceled)
11. (Canceled)
12. (Canceled)
13. (Canceled)
14. (Canceled)
15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)

21. (Canceled)

22. (Canceled)

23. (Canceled)

24. A supply item comprising a circuit including a tri-state input port, said supply item associated with an imaging apparatus, and said supply item having at least three modes of operation, wherein a particular mode of operation of said at least three modes of operation is selected based on a signal level of a tri-state input signal supplied to said tri-state input port.

25. A supply item comprising a circuit including a tri-state input port, and said supply item having at least three modes of operation, wherein a particular mode of operation of said at least three modes of operation is selected based on a signal level of a tri-state input signal supplied to said tri-state input port,

- 5 wherein said circuit further includes:
- a clock input port for receiving a clocking signal;
 - a first output port;
 - a second output port coupled to said tri-state input port;

10 a D-flip-flop having a D input, a clock input CLK, and a Q output, said D input being tied high, said clock input CLK being coupled to said tri-state input port, and said Q output being coupled to said first output port; and

a buffer having a buffer input and a buffer output, said buffer input being coupled to said clock input port, and said buffer output being coupled to said clock input CLK of said D-flip-flop.

26. The supply item of claim 25, further comprising a decoding circuit coupled to said first output port and said second output port, said decoding circuit providing three discrete outputs corresponding, respectively, to a floating level, a logic high level and a logic low level present at said tri-state input port.

27. The supply item of claim 26, wherein each of said three discrete outputs is respectively coupled to one of at least three selectable mode devices.

28. The supply item of claim 24, wherein said supply item is a printhead cartridge.

29. The supply item of claim 24, wherein said circuit is formed on a printhead attached to said supply item.

30. An imaging apparatus, comprising:

a controller; and

5 a supply item for use in said imaging apparatus including a circuit having a tri-state input port coupled to said controller, said supply item having at least three modes of operation, wherein a particular mode of operation of said at least three modes of operation is selected based on a signal level of a tri-state input signal supplied to said tri-state input port by said controller.

31. An imaging apparatus, comprising:

a controller; and

a supply item including a circuit having a tri-state input port coupled to said controller, said supply item having at least three modes of operation, wherein a particular mode of operation

- 5 of said at least three modes of operation is selected based on a signal level of a tri-state input signal supplied to said tri-state input port by said controller,
- wherein said circuit further includes:
- a clock input port for receiving a clocking signal;
 - a first output port;
 - 10 a second output port coupled to said tri-state input port;
 - a D-flip-flop having a D input, a clock input CLK, and a Q output, said D input being tied high, said clock input CLK being coupled to said tri-state input port, and said Q output being coupled to said first output port; and
 - a buffer having a buffer input and a buffer output, said buffer input being coupled to said
 - 15 clock input port, and said buffer output being coupled to said clock input CLK of said D-flip-flop.

32. The imaging apparatus of claim 31, further comprising a decoding circuit coupled to said first output port and said second output port, said decoding circuit providing three discrete outputs corresponding, respectively, to a floating level, a logic high level and a logic low level present at said tri-state input port.

33. The imaging apparatus of claim 32, wherein each of said three discrete outputs is respectively coupled to one of at least three selectable mode devices.

34. The imaging apparatus of claim 30, wherein said supply item is a printhead cartridge.

35. The imaging apparatus of claim 30, wherein said circuit is formed on a printhead attached to said supply item.

X. EVIDENCE APPENDIX

Included herein, and listed below, is a copy of each reference upon which the Examiner relied in rejecting one or more of the claims of the present application.

Exhibit:

A. U.S. Patent No. 5,253,934 (Potucek).

XI. RELATED PROCEEDINGS APPENDIX

(No Entries)